

# Challenges and Opportunities Facing Middle-Power Nonproliferation Overachievers: The Republics of Kazakhstan and Korea

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## Abstract

*This article analyzes how certain non-nuclear weapons states have become prominent contributors to the global nuclear nonproliferation regime despite their absence of such weapons. The first section of this manuscript defines the concept of middle powers and nonproliferation overachievers. The next part relates the achievements of the Republic of Kazakhstan in countering the vertical and horizontal spread of nuclear weapons, including eliminating the nuclear delivery systems Kazakhstan inherited from the Soviet Union and contributing to international efforts to prevent Iran and North Korea from achieving nuclear weapons. The third section compares the case of Kazakhstan to that of the Republic of Korea, which has also made major contributions in support of nuclear nonproliferation, especially regarding enhancing the security of nuclear materials. The next section reviews challenges facing each state's nonproliferation policies, including Russia's invasion of Ukraine and renewed great-power rivalries. The conclusion suggests possible joint nuclear nonproliferation initiatives for Kazakhstan and South Korea. It also analyzes the diverging and common drivers explaining the two countries' behavior, such as their alliance ties and nuclear histories.*

The Republic of Kazakhstan is a world leader in opposing nuclear weapons while promoting the peaceful use of civilian nuclear power. Shortly after achieving independence in 1991, the newly independent government of Kazakhstan, led by President Nursultan Nazarbayev, took decisive measures to renounce and destroy the nuclear weapons that the Soviet Union left on its soil when it collapsed. Kazakhstan was subsequently able to accede to the Treaty on the Non-Proliferation of Nuclear Weapons (Non-Proliferation Treaty or NPT) as a non-nuclear weapons state. Since then, Kazakhstan has worked cooperatively with the International Atomic Energy Agency (IAEA) to fully implement the Agency's safeguards regarding the country's peaceful nuclear energy activities even as Kazakhstan has become a leading world supplier of uranium and expanded its national nuclear energy infrastructure, to support its own and other countries' energy needs. Kazakhstan has also collaborated with other partners to counter proliferation, employing diverse diplomatic measures to discourage Iran or North Korea from seeking nuclear weapons. Due to its horrific legacy as a nuclear weapons test site, Kazakhstan has also been a leading world force behind ending the testing of nuclear weapons. At the global level, Kazakhstan has promoted the universal adoption of the Comprehensive Test Ban Treaty (CTBT). Within Central Asia, Kazakhstan had a lead role in the adoption of the Central Asian Nuclear Weapons Free Zone (CANWFZ) and pursued several initiatives to constrain Iran's nuclear weapons potential.

Kazakhstan strongly supported the Nuclear Security Summits that occurred every other year between 2010 and 2018. Citing Kazakhstan's leadership on nuclear nonproliferation issues, Nazarbayev even proposed hosting such a summit itself.<sup>1)</sup> To advance global nuclear security, Kazakhstan has promoted the safe use of nuclear energy, stronger steps to secure radiological sources (which can be used to make radiological dispersal devices, aka "dirty bombs"), and enhancing the IAEA's role and authority in the areas of nuclear safety and security. More recently, Kazakhstan became the first country to establish a "nuclear fuel bank" for low-enriched uranium (LEU) in cooperation with the IAEA. Such a bank allows countries interested in pursuing civilian nuclear power to procure LEU fuel from an international supplier without having to develop their own fuel fabrication facilities, which are both costly and potentially able to manufacture fissile material for nuclear weapons. Throughout his years in office, Nazarbayev was also a prominent statesman calling upon the existing nuclear weapons states to undertake more rapid and comprehensive steps toward nuclear disarmament. Nazarbayev's successor as President, former Foreign and Prime Minister Kassym-Jomart Tokayev, has taken up this mantle and maintained Kazakhstan's status as a global nonproliferation overachiever, referencing the issue at this fall's UN

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1) Nursultan Nazarbayev, "Nuclear Security Summit 2014," KazakhTV, March 25, 2014, [http://kazakh-tv.kz/en/view/world\\_news/page\\_47448\\_](http://kazakh-tv.kz/en/view/world_news/page_47448_).

General Assembly session and augmenting Kazakhstan's support for novel nonproliferation initiatives.

The organization of this article proceeds as follows. This section defines the concept of middle powers and nonproliferation overachievers. The second part reviews the achievements of Kazakhstan in countering the vertical and horizontal spread of nuclear weapons. These contributions include eliminating the nuclear arsenal Kazakhstan inherited from the Soviet Union and discouraging other countries from seeking nuclear weapons. The third section compares the Kazakhstan case to that of the Republic of Korea (ROK), which has also punched above its weight in the nuclear proliferation domain, especially regarding enhancing the security of nuclear materials. The next part reviews some challenges facing each state's nonproliferation policies. These include Russia's invasion of Ukraine, heightened great-power tensions, and other factors that have worsened the conditions for nuclear nonproliferation and disarmament. The conclusion suggests possible areas for joint nonproliferation initiatives between Kazakhstan and South Korea, such as measures to strengthen the security of nuclear facilities in potential war zones. It also analyzes the diverging and common drivers explaining the two countries' behavior, such as their alliance ties and nuclear histories.

The academic concept of "middle powers" draws insights from the realist, liberal and constructivist school of international relations since it embraces military, economic, and soft power issues along with status considerations and the national leadership's conception of their country's proper role in world affairs. These countries lie somewhere on a continuum between the primary "rule makers" of the international system and the regular "rule takers" that must maneuver as best they can according to the norms, laws, and rules decided by the great powers. In some areas, they can exploit their country's unique capabilities, perceived legitimacy, and other favorable variables to bend and even change some rules.<sup>2)</sup> Some emerging scholars are profitably applying the concept to nuclear nonproliferation issues, noting the contributions of Brazil, Turkey, and South Korea and other influential non-nuclear-weapons states to curbing the spread of nuclear weapons. These analysts find that security, status, and domestic political factors have all, at times, contributed to the adoption of these policies as well as to these countries being able to achieve more substantial results than might be expected given their general attributes.<sup>3)</sup> The continued diffusion of nuclear and other capabilities to additional countries beyond the traditional "P5" great powers

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2) Detlef Nolte, "How to Compare Regional Powers: Analytical Concepts and Research Topics," *Review of International Studies*, vol. 36, no. 4 (2010), pp. 881-901.

3) Yeseul Woo, "The Role of 'Middle Powers' in Nuclear Security Crises," unpublished doctoral dissertation, Department of War Studies of King's College, London, United Kingdom, working draft.

of China, France, Russia, the United States, and the United Kingdom could also generate more “nonproliferation overachievers.” All five of these states both have nuclear weapons and permanent membership on the UN Security Council, with the right to veto proposed resolutions. In some cases, middle powers have played a great role in curbing the proliferation of weapons of mass destruction (WMD) despite their lack of nuclear weapons, permanent membership on the UN Security Council, or other military or diplomatic capabilities applicable to the nonproliferation area.

### **Kazakhstan’s Emergence as a Middle Power in the Nuclear Nonproliferation Realm**

The Republic of Kazakhstan also fits nicely into this framework. Nursultan Nazarbayev, Kazakhstan’s founding post-Soviet president, elevated nuclear nonproliferation as a core element of his country’s foreign policy. Other domestic political actors, including the nation’s nuclear scientists and civic movements, embraced this priority. Kazakhstan has realized important gains through its nonproliferation “niche diplomacy.”<sup>4)</sup> For instance, Kazakhstan elevated its international status through its nonproliferation commitments and contributions. In the words of the chair of the parliament’s committee on foreign affairs, defense, and security committee, Mukhtar Yerman, “Kazakhstan would not have the same level of respect it now enjoys in the international arena” had it not pursued its forward-leaning proliferation policies.<sup>5)</sup> By renouncing its nuclear weapons options, moreover, Kazakhstan has eschewed the political isolation and economic sanctions that have burdened those countries that have pursued nuclear weapons capabilities, such as Iran and North Korea, which both violated numerous UN Security Council resolutions in seeking uranium enrichment and long-range ballistic missile capabilities.

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4) Emmanuelle Maitre, “Kazakhstan’s nuclear policy: an efficient niche diplomacy?,” Fondation pour la Recherche Stratégique, July 1, 2018, <https://www.frstrategie.org/en/publications/notes/kazakhstans-nuclear-policy-efficient-niche-diplomacy-2018>.

5) Oksana Davydova, “First President Nazarbayev’s Legacy: Fearless Anti-Nuclear Weapons Pioneer,” *The Astana Times*, July 1, 2020, <https://astanatimes.com/2020/07/first-president-nazarbayevs-legacy-fearless-anti-nuclear-weapons-pioneer/>

During the Soviet era, the Communist Party of the Soviet Union ruthlessly exploited Kazakhstan's territory to advance its military-industrial complex. The most horrific dimension of this process was the use of Kazakhstan to house major elements of the Soviet Union's weapons of mass destruction complex, encompassing nuclear, chemical, and biological weapons. The Soviet power ministries exploited Kazakhstan's rich uranium deposits to fuel the Soviet civilian nuclear energy program as well as manufacture nuclear warheads. The Soviet military then deployed many of these warheads on long-range nuclear-armed missiles, many based in Kazakhstan, targeted at the United States and other countries. Most notoriously, the Soviets conducted hundreds of nuclear weapons detonations at the Semipalatinsk Nuclear Test Site (also known as the Polygon) in northeastern Kazakhstan. Many of these explosions generated radioactive fallout that contaminated huge areas of the country, leading to serious health problems for well over a million people.

Freed from the Soviet yoke, the Nazarbayev government swiftly took measures to eliminate this unwelcome legacy, which at the time included some 1,400 nuclear warheads on former Soviet intercontinental ballistic missiles and T-95M cruise-missile-carrying strategic bombers. This total would have amounted to the world's fourth-largest nuclear force if the government had decided to maintain the arsenal as a means of deterrence and defense. Within a few years, Kazakhstan either eliminated these nuclear warheads and strategic delivery systems or transferred components to the United States and the new Russian Federation, which unlike Kazakhstan, decided to sustain large nuclear forces. In exchange, Kazakhstan received security guarantees from the United States, the United Kingdom, and the Russian Federation regarding the independence and sovereignty and its borders, commitments to refrain from threats of military force and economic coercion, and pledges of consultations should questions arise concerning these assurances. Additionally, these three countries provided similar security guarantees to Ukraine, whose government also renounced its Soviet nuclear weapons inheritance, albeit more reluctantly and under tremendous U.S. and Russian pressure. In 1994, Kazakhstan acceded to the Treaty on the Reduction and Limitation of Strategic Offensive Arms (START I) and the NPT as a non-nuclear-weapons state.<sup>6)</sup>

Furthermore, on August 29, 1991, Nazarbayev issued a decree that closed the Semipalatinsk complex and banned the future testing of nuclear weapons on Kazakhstan's territory. The decree was supported by the country's large anti-nuclear testing movement, which formed alignments with other groups

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6) Abira Kuandyk, "Kazakhstan Welcomes Treaty on Measures for Further Reduction and Limitation of Strategic Offensive Arms," *The Astana Times*, February 2, 2021, <https://astanatimes.com/2021/02/kazakhstan-welcomes-treaty-on-measures-for-further-reduction-and-limitation-of-strategic-offensive-arms/>.

exposed to nuclear weapons testing, such as the people of Nevada.<sup>7)</sup> The General Assembly of the United Nations later designated August 29 as the worldwide International Day against Nuclear Tests. The IAEA, the United States, and the Russian Federation then executed a joint project to seal off the tunnels at Semipalatinsk and take other measures to secure its dangerous nuclear and radiological material. Meanwhile, the Kazakhstan authorities constructed a National Nuclear Center at the former Semipalatinsk (renamed Semey in 2007) site dedicated to the peaceful research of nuclear science, including environmental monitoring of the previous nuclear tests. Mirroring the country's multi-vector foreign policy, the national nuclear company, Kazatomprom, has sustained comprehensive commercial ties with entities in China, Europe, Russia, and the United States. In line with its commitment to making its nuclear energy power projects safe and secure, the government also signed a Comprehensive Safeguards Agreement with the IAEA, which came into force in 1994, and then acceded to the Agency's Additional Protocol, which entered into force in 2007. Through the Additional Protocol, IAEA monitors have the authority to cover a broader range of potential nuclear activities, including inspection rights at undeclared sites where unauthorized nuclear activities might be occurring.

Kazakhstan subsequently joined the world's major export control regimes, such as the Nuclear Suppliers Group, the Proliferation Security Initiative, the Global Initiative to Combat Nuclear Terrorism, the Global Partnership against the Spread of Weapons of Mass Destruction, and the Zangger (Nuclear Exporters) Committee. In 2008, the parliament ratified the International Convention for the Suppression of Acts of Nuclear Terrorism, which commits parties to undertake measures to prevent and punish efforts to utilize nuclear materials in terrorist acts. In support of UN Security Council Resolution 1540 (2004), Kazakhstan has taken steps to prevent non-state actors from developing, acquiring, manufacturing, possessing, transporting, transferring, or using nuclear, chemical, or biological weapons and their means of delivery. Kazakhstan has hosted conferences and undertaken other measures to diffuse knowledge about the adverse impacts of nuclear tests to promote the universal adoption of the Comprehensive Test Ban Treaty. To generate grassroots' support, Kazakhstani citizens organized an Internet-based project, "Abolish Testing – Our Mission" (ATOM) to empower any individual to sign a position calling on all governments to adopt the CTBT. In the United Nations and other arenas, Kazakhstani officials called for measures to bolster the authority and the role of the IAEA, adopt legally binding nuclear safety standards, increase the transparency of national nuclear activities, strengthen the negative security assurances provided the non-nuclear weapons states, establish uniform procedures for responding with alacrity to nuclear incidents accidents, and

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7) Togzhan Kassenova, *Atomic Steppe: How Kazakhstan Gave Up the Bomb* (Stanford University Press, 2022).

accelerate long-term progress toward complete nuclear disarmament. At Astana's initiative, the UN General Assembly adopted the UN Universal Declaration on the Achievement of a Nuclear-Weapon-Free World.<sup>8)</sup> In 2019, Nazarbayev further organized a Global Alliance of Leaders for Nuclear Security and Nuclear-Weapon-Free World. Due to these policies and his making nuclear issues a prominent theme in his many presentations before the United Nations and other international audiences, Nazarbayev made nonproliferation Kazakhstan's international "brand."<sup>9)</sup>

Kazakhstan's most innovative contribution to enhancing global nuclear nonproliferation is its hosting of the world's first international nuclear "fuel bank" under IAEA supervision. The facility, which began operating in 2017 after a decade of detailed preparations, offers uranium reactor fuel and various nuclear services to states pursuing peaceful nuclear energy programs, allowing them to avoid the economic, environmental, and diplomatic costs of making their nuclear fuel through an indigenous uranium enrichment cycle. In other words, the bank provides countries with reactor fuel in a safer, cheaper, and more secure manner than if they tried to develop their own fuel-producing technologies, which can be misused to make nuclear weapons. For example, North Korea notoriously misused IAEA assistance to develop the capacity to manufacture fissile material for nuclear warheads. A nuclear fuel bank relies on market incentives, rather than coercive methods, to encourage countries to lease nuclear fuel from designated provider states and then repatriate the resulting spent uranium fuel to the original supplier for reprocessing and disposal. Under its arrangement with the IAEA, Kazakhstan bears the costs for the bank's daily operations, while voluntary donations to the Agency cover the costs of the repository's equipment, uranium stockpiles, and related expenditures.<sup>10)</sup> The international community supported Kazakhstan's proposal to host the bank given the country's extensive experience with nuclear technologies; its exemplary nonproliferation record, and its large uranium deposits and exports.

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8) "Treaty on Prohibition of Nuclear Weapons as New Instrument in Nuclear Disarmament Process," *The Astana Times*, June 20, 2022, <https://astanatimes.com/2022/06/treaty-on-prohibition-of-nuclear-weapons-as-new-instrument-in-nuclear-disarmament-process/>.

9) Stephen J. Blank, "Nuclear non-proliferation's new challenge," *Stars and Stripes*, August 25, 2021, <https://www.stripes.com/opinion/2021-08-25/nuclear-non-proliferation-new-challenge-kazakhstan-2663811.html>.

10) Catherine Putz, "Kazakhstan Banks on Nuclear Power," *The Diplomat*, June 3, 2015, <http://thediplomat.com/2015/06/kazakhstan-banks-on-nuclear-power/>.

## Nonproliferation Partnership with the United States

The United States was Kazakhstan's leading foreign partner in executing its initial nonproliferation activities, providing substantial funding and technical assistance. Much of the support provided flowed through the U.S. Nunn-Lugar Cooperative Threat Reduction program. The most prominent joint endeavor was "Project Sapphire," in which Kazakh-U.S. collaboration relocated over 500 kilograms of highly enriched uranium (HEU) from Kazakhstan's Ulba Metallurgical Plant to highly secure storage facilities at the Oak Ridge complex in the United States.<sup>11)</sup> Additional joint Kazak-U.S. projects have included "downblending" HEU in Kazakhstan into low-enriched uranium (LEU), which is much less suitable for making weapons.<sup>12)</sup> Another line of action included enhancing barriers that impede the smuggling of nuclear and radiological materials through Kazakhstan's territory. The United States and other countries have helped the Kazakhstan government to strengthen its export controls, nuclear training and education activities, border and cyber security, and physical protection systems.

Collaborating at the highest levels, U.S. and Kazakhstani policymakers have regularly showcased Kazakhstan's utility as an exemplary non-proliferation actor whose policies and practices should be emulated by North Korea, Iran, and other states undertaking controversial nuclear programs. Kazakhstan's leaders shared this aspiration. At the time of the 2012 Nuclear Security Summit in Seoul, President Nazarbayev published an op-ed in *The New York Times* entitled, "What Iran Can Learn from Kazakhstan." Reminding readers of how Kazakhstan prospered after eliminating its nuclear weapons capabilities and committing to only the pursuit of only peaceful nuclear activities in close cooperation with the IAEA, Nazarbayev wrote that, "Kazakhstan has used its close diplomatic relations with our neighbor across the Caspian Sea to urge Tehran to learn from our example."<sup>13)</sup> The following year, Kazakhstan played a prominent role in international efforts to keep Iran from pursuing nuclear weapons. Two rounds of talks involving the "P5+1" group (all five permanent UN Security Council members and Germany) negotiating with Iran took place in Almaty, Kazakhstan. The Iranian government had rejected proposals to meet in other locations but viewed Kazakhstan as an impartial host. Then-Secretary of State John Kerry and

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11) John A. Tirpak, "Project Sapphire," *Air Force Magazine* (August 1995), <http://www.afa.org/magazine/Aug1995/0895sapphire.asp>.

12) "Kazakhstan and U.S. cooperate to eliminate highly enriched uranium in Kazakhstan," U.S. National Nuclear Security Administration, U.S. Department of Energy, September 22, 2020, <https://www.energy.gov/nnsa/articles/kazakhstan-and-us-cooperate-eliminate-highly-enriched-uranium-kazakhstan#.X2tmt3cqS6E.twitter>

13) Nursultan Nazarbayev, "What Iran Can Learn From Kazakhstan," *The New York Times*, March 25, 2012, <http://www.nytimes.com/2012/03/26/opinion/what-iran-can-learn-from-kazakhstan.html>.

other U.S. officials expressed gratitude for Kazakhstan's contribution to realizing the subsequent Iran nuclear deal, the Joint Comprehensive Plan of Action (JCPOA). When Jill Hruby, U.S. Administrator of the National Nuclear Security Administration, visited Kazakhstan in October 2022, she remarked that, "Kazakhstan has been an outstanding partner of the United States on nuclear security and nonproliferation for over 30 years."<sup>14</sup> Her Deputy, Frank Rose, added that, "We feel strongly that now more than ever we must continue working together to make the region safer through our commitment to nuclear security and nonproliferation."<sup>15</sup> Several U.S. members of Congress nominated Nazarbayev for a Nobel Prize for his contributions to nuclear peace and nonproliferation.<sup>16</sup> Due to his strong, sustained, and influential nonproliferation stance, Nazarbayev received more opportunities to meet with U.S. presidents than his Central Asian counterpart. His outside influence also helped Kazakhstan win election to a seat as a non-permanent member of the UN Security Council in 2016. Nazarbayev used the opportunity to advance "Kazakhstan's Concept and Vision for Sustaining Global Partnerships for a Secure, Just and Prosperous World," whose first priority was "achieving a world free of nuclear weapons."<sup>17</sup>

Nonetheless, Kazakhstani leaders have called on the United States to ratify the CTBT, accept all the regional nuclear-free zones, and reduce its nuclear arsenal. More generally, Kazakhstani leaders have criticized the United States, the Russian Federation, and the other nuclear weapons states for their halting progress toward nuclear disarmament, for the flawed execution of their negative security assurances to countries like Ukraine and Kazakhstan that renounced their nuclear weapons options, and for sustaining an "unfair" NPT regime that treated some countries differently from others. Kazakhstan notably acceded to the Treaty on the Prohibition of Nuclear Weapons (TPNW) in 2019 despite P5 opposition. Unlike the NPT, the TPNW would impose an immediate and comprehensive ban on the research, development, manufacture, or possession of nuclear weapons. In partnership with their colleagues from Kiribati, where the United States and the United Kingdom had conducted dozens of nuclear tests, Kazakhstani diplomats successfully placed the issue of rendering assistance to people and places that suffered from nuclear testing on the agenda of the First Meeting of the TPNW States Parties in June 2022.<sup>18</sup> They also have encouraged dialogue between states

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14) "Top NNSA Leaders Visit Kazakhstan, Discuss Continued Security, Nuclear Nonproliferation Cooperation," National Nuclear Security Administration, U.S. Department of Energy, October 14, 2022, <https://www.energy.gov/nnsa/articles/top-nnsa-leaders-visit-kazakhstan-discuss-continued-security-nuclear-nonproliferation>.

15) *Ibid.*

16) "Two US Congressmen Think Kazakhstan's President Deserves a Nobel Peace Prize," Eurasianet, June 3, 2008, <https://eurasianet.org/two-us-congressmen-think-kazakhstans-president-deserves-a-nobel-peace-prize>.

17) Almasbek Zhumadilov, "Kazakhstan set to assume UNSC presidency Jan. 1," *The Astana Times*, December 31, 2017, <https://astanatimes.com/2017/12/kazakhstan-set-to-assume-uns-sec-presidency-jan-1/>.

holding diverging opinions on the treaty, including the P5 opponents. Though Kazakhstan was the first former Soviet republic to join the TPNW, its diplomats have since encouraged additional countries, especially the additional members of the CANWFZ, to join as well.<sup>19)</sup>

## South Korea's Contributions

South Korea boasts strong credentials as an important contributor to the global nonproliferation regime. The ROK has joined the Nuclear Non-Proliferation Treaty as a non-nuclear-weapon state, ratified the Comprehensive Nuclear Test Bans Treaty, and adopted the IAEA Additional Protocol and other IAEA conventions. The ROK is also a member of the Nuclear Suppliers Group as well as the Zangger Committee. South Korea has partnered with Washington to promote the adoption of the IAEA Additional Protocol by importers of their nuclear technologies and services.<sup>20)</sup> At the ROK-based International Nuclear Nonproliferation Security Academy, experts from the U.S. National Nuclear Security Administration and the Korea Institute for Nuclear Nonproliferation and Control (KINAC) jointly train nuclear officials from many countries on nuclear security and nonproliferation best practices. This continuing ROK support for policies, treaties, and doctrines that support nonproliferation, disarmament, no first use, and no testing of nuclear weapons, along with the exclusively peaceful use of nuclear technology under strong international safeguard, helps shore up the many nuclear nonproliferation regimes under strain.

ROK support for nuclear security—denying terrorists and other non-state actors access to nuclear materials, technologies, and experts—was most prominent in 2012. After Moscow proved unable to host that year's second Nuclear Security Summit, South Korean leaders, recognizing the importance of sustaining leadership attention and momentum in countering potential nuclear terrorism, arranged to host the session in Seoul. President Lee Myung-bak said that winning the competition to host this high-prestige event was a “diplomatic breakthrough”

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18) “Treaty on Prohibition of Nuclear Weapons as New Instrument in Nuclear Disarmament Process,” *The Astana Times*, June 20, 2022, <https://astanatimes.com/2022/06/treaty-on-prohibition-of-nuclearweapons-as-new-instrument-in-nuclear-disarmament-process/>.

19) Kazakhstan called on CANWFZ States Parties to join the Treaty on the Prohibition of Nuclear Weapons,” Government of Kazakhstan, April 2, 2022, <https://www.gov.kz/memleket/entities/mfa/press/news/details/322068?lang=en>

20) Carol A. Clark, “NNSA’s Hruby Visits South Korea To Discuss National Security, Nonproliferation, And Nuclear Security Issues,” U.S. National Nuclear Security Administration, U.S. Department of Energy, August 15, 2020, <https://ladailypost.com/nnsas-hruby-visits-south-korea-to-discuss-national-security-nonproliferation-and-nuclear-security-issues/>.

in raising South Korea's international profile.<sup>21)</sup> The ROK's effective leadership of the summit process also underscored its reputation as a major civilian nuclear energy player committed to strong safety and security standards for its nuclear-related exports. In taking up the baton, the ROK also helped fortify Asian support for enhancing global nuclear security, which before then had been primarily a U.S. initiative and transatlantic focus. Seoul also initiated the practice of hosting concurrent conferences of NGO experts and of nuclear industry executives. At the Seoul summit, the participating leaders from 53 countries and four international organizations both deepened and expanded the commitments they made at the inaugural 2010 summit. Through such innovative tools as issuing multinational "gift baskets," the participants made further progress in decreasing the use of HEU and plutonium, both potential fissile materials, securing radiological sources, elevating cyber and information security, and integrating nuclear safety and security.<sup>22)</sup>

The focus of South Korea's nuclear diplomacy has been securing the nuclear disarmament of the Democratic People's Republic of Korea (DPRK, commonly referred to as "North Korea"). Past diplomatic deals involving North Korea, such as the 1994 Agreed Framework that froze the DPRK's nuclear activities and the 2005 Six Party accord that established an agreed path towards de-nuclearizing the Korean Peninsula, have failed to halt the DPRK's programs for any significant period. Although the parties have signed several interim agreements, they either were never implemented or later unraveled. Neither diplomacy, nor sanctions, nor military countermeasures have reversed North Korea's nuclear weapons program for any length of time. In 2022, North Korea test launched more nuclear-capable missiles than in any previous year. Pyongyang gives no indication that the DPRK will ever relinquish its nuclear weapons potential.

## Challenges

South Korea and Kazakhstan face additional challenges as they seek to decrease global nuclear threats. The Russian invasion of Ukraine, while highlighting Kazakhstan's value as a nuclear nonproliferation leader, has exposed the country to sanctions and countersanctions imposed by Western countries and the Russian government upon each other. The conflict has elevated risks for regional investment, raised prices for many goods, seen tens of thousands of Russians flee to Kazakhstan, and impeded the transit of Kazakhstan's oil and other

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21) Na Jeong-ju, "Korea to Host Nuclear Security Summit in 2012," *The Korea Times*, April 13, 2010, [https://www.koreatimes.co.kr/www/nation/2022/03/113\\_64160.html](https://www.koreatimes.co.kr/www/nation/2022/03/113_64160.html).

22) Kelsey Davenport, "States Make Nuclear Security Pledges," *Arms Control Today* (April 2012), [https://www.armscontrol.org/act/2012\\_04/States\\_Make\\_New\\_Nuclear\\_Security\\_Pledges](https://www.armscontrol.org/act/2012_04/States_Make_New_Nuclear_Security_Pledges).

goods through Russian territory or Russian-controlled pipelines and oil terminals. Additionally, the war has intensified concerns about Russian territorial aspirations regarding Kazakhstan. Not only does Kazakhstan have many ethnic Russians, but President Vladimir Putin and other Russian leaders have made comments contesting Kazakhstan's historical claims to independent statehood. Tokayev boldly refused to recognize the independence of the Ukrainian regions of Donetsk and Lugansk or Moscow's subsequent annexation of Ukrainian territory, despite Russian pressure to do so.<sup>23)</sup>

South Korea has also faced increased great power coercion. A few years ago, the Chinese government applied a full-court press of diplomatic threats and sanctions to deter South Korea from deploying the U.S. Terminal High Altitude Area Defense (THAAD) ballistic missile defense system (BMD). The PRC organized consumer boycotts of ROK products, limited tourist and cultural exchanges with South Korea, and increased paramilitary incursions into South Korean waters. The Chinese pressure contributed to delays in installing the THAAD system. ROK diplomats also reached an informal "Three Nos" understanding with their PRC counterparts that suspended the deployment of additional THAAD batteries, operated the THAAD system in South Korea independently from other U.S. BMD assets, and declined to pursue a trilateral alliance with Japan regarding missile defense. Despite Chinese objections, the newly elected ROK administration under President Yoon Suk-yeol is now revisiting these limits.<sup>24)</sup> Meanwhile, as Russian-U.S. relations have deteriorated, Moscow's interest in maintaining the DPRK regime as a strategic buffer and security challenge for the United States has grown, while Russian willingness to apply international sanctions on North Korea has decreased. According to the U.S. government, Russia is also seeking munitions and other military support from the DPRK for its war in Ukraine.<sup>25)</sup> Despite North Korea's unprecedented wave of missile launches and other violations of UN Security Council resolutions originally adopted by Beijing and Moscow, the Chinese and Russian governments have blocked recent efforts to impose new sanctions on North Korea to punish and coerce Pyongyang to end its provocative policies. Instead, they have tried to exploit the crisis to constrain ROK-U.S. military cooperation, challenging the extended nuclear deterrence policies of the United States and South Korea.

Furthermore, Russia's aggression against Ukraine has decreased opportunities

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23) Robyn Dixon, "Setbacks in Ukraine war diminish Russia's clout with regional allies," *The Washington Post*, November 30, 2022, <https://www.washingtonpost.com/world/2022/11/30/russia-kazakhstan-regional-neighbors-ukraine/>.

24) Jo He-rim, "China demands Korea uphold 'Three Nos' policy," *The Korea Herald*, July 28, 2022, <https://www.koreaherald.com/view.php?ud=20220728000666>.

25) Yonhap, "Russia continues to look to N. Korea for weapons for use in Ukraine: State Dept.," *The Korea Herald*, December 8, 2022, <https://www.koreaherald.com/view.php?ud=20221208000072>.

for nuclear arms control and increased potential incentives for states not possessing nuclear weapons to do so. The view has grown that Ukraine's abandonment of its nuclear weapons options in return for worthless international security assurances was a bad bargain. For example, analysts believe that the Ukraine experience will make the North Korean leadership even less willing to abandon its nuclear weapons program.<sup>26)</sup> Russia's multiple violations of the 1994 Budapest Memorandum have eroded confidence in the negative and positive security assurances the nuclear weapons states make to other countries as nonproliferation tools. In general, the NTP-recognized Nuclear Weapons States give negative security assurances to not use or threaten to use nuclear weapons against countries that do not possess them and that comply with their nuclear nonproliferation obligations. Kazakhstani officials have cited the Ukraine crises to demand clarification of the nature and extent of these assurances as well as measures to strengthen them.

By making so many nuclear threats, Russian officials have also underscored the potential advantages of having nuclear weapons. Fears of provoking Russian nuclear escalation has constrained the types of military support NATO governments have been willing to provide Ukraine. For instance, they have declined to establish a no-fly zone over Ukraine or supply long-range strike systems that would allow the Ukrainians to strike deep into Russian territory. Even before the war, the international nuclear nonproliferation regime constructed during the Cold War has been under strain due to renewed great-power competition, the proliferation of nuclear weapons and missile technologies to additional states, and the enhancement of non-nuclear means of attack (such as cyber weapons). As a result, the arms control regimes of the Cold War, which limited only two countries and one type of strategic weaponry (nuclear-armed missiles), have declined in value.

Even South Koreans have felt the pull of nuclear weapons options, including NATO-style "nuclear-sharing" arrangements.<sup>27)</sup> The credibility of U.S. security guarantees to defend South Korea with the use of nuclear weapons was weakening even before Russia's invasion of Ukraine due to the growth of DPRK nuclear capabilities; U.S. military setbacks in Afghanistan and other countries; statements by U.S. leaders such as former President Donald Trump casting doubts on the durability of U.S. force deployments; the U.S. abandoning of previous "red lines" against WMD activities in Syria, Iran, and elsewhere; and rising support among

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26) Jeongmin Kim, "DPRK unlikely to denuclearize after war in Ukraine: Ex-ROK ambassador to Kyiv," Nk News, March 4, 2022, <https://www.nknews.org/2022/03/dprk-unlikely-to-denuclearize-after-war-in-ukraine-ex-rok-ambassador-to-kyiv/>.

27) Jennifer Ahn, "The Evolution of South Korea's Nuclear Weapons Policy Debate," Council on Foreign Relations, August 16, 2022, <https://www.cfr.org/blog/evolution-south-koreas-nuclear-weapons-policy-debate/>.

some Americans on behalf of a no-first use or sole purpose declaratory policy that could imply the United States would not use nuclear weapons in response to a DPRK biological, chemical, cyber, or large-scale conventional attack against South Korea. In response, prominent ROK national security leaders have raised the issue of returning U.S. non-strategic nuclear weapons to South Korea or for the ROK to acquire its own nuclear weapons, which could also give the DPRK more incentives to negotiate mutual military reductions with the South. However, seeking nuclear weapons could antagonize the United States and other countries, expose South Koreans to economic sanctions, weaken the ROK's high international reputation, legitimize the DPRK's keeping its own nuclear weapons, and deepen first-strike incentives between North and South Korea in a crisis.<sup>28)</sup>

When Presidents Joe Biden visited Seoul in May 2022, he and President Yoon reaffirmed their commitment to “the complete denuclearization of the Korean Peninsula.” They also noted the U.S. commitment to deploy strategic military assets to the Peninsula “in a timely and coordinated manner...and identify new or additional steps to reinforce deterrence in the face of DPRK destabilizing activities.” The joint presidential statement further restated the U.S. commitment to employ “the full range of U.S. defense capabilities, including nuclear, conventional, and missile defense capabilities,” to protect South Korea.<sup>29)</sup> The Biden and Yoon administrations also resurrected the ROK-U.S. Extended Deterrence Strategy and Consultation Group. This mechanism is the main senior-level political-military consultative structure through which the two governments discuss how the Pentagon might use strategic weapons to deter a DPRK assault on the ROK. Through the Group, experts from both countries can jointly appraise potential U.S. extended deterrence packages to respond to various DPRK threats. At the September 16, 2022, high-level meeting, “The United States reiterated its ironclad and unwavering commitment to draw on the full range of its military capabilities, including nuclear, conventional, missile defense, and other advanced non-nuclear capabilities, to provide extended deterrence for the ROK.”<sup>30)</sup>

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28) Bruce Klingner, “Now is not the time for South Korea to go nuclear,” *The Washington Times*, August 2, 2022, <https://www.washingtontimes.com/news/2022/aug/2/now-is-not-the-time-for-south-korea-to-go-nuclear/>.

29) “United States-Republic of Korea Leaders’ Joint Statement,” The White House, May 21, 2022, <https://www.whitehouse.gov/briefing-room/statements-releases/2022/05/21/united-states-republic-of-korea-leaders-joint-statement/>.

30) “Joint Statement on the Extended Deterrence Strategy and Consultation Group Meeting,” U.S. Department of Defense, September 16, 2022, <https://www.defense.gov/News/Releases/Release/Article/3161720/joint-statement-on-the-extended-deterrence-strategy-and-consultation-group-meet/>.

## **Concluding Observations**

Though South Korean governments continue to eschew nuclear weapons, a recurring source of tension with the United States is the ROK interest in reprocessing plutonium to support the expanded use of nuclear power domestically, make their nuclear exports more competitive, and decrease the volume of plutonium stored in waste depositories. U.S. officials have resisted the spread of reprocessing technologies due to their proliferation risks. In return for receiving U.S. nuclear technologies, reactor fuel, and other support when the ROK launched its nuclear power program, South Korea committed not to reprocess plutonium, enrich uranium, or transfer nuclear products made from any U.S.-supplied nuclear material or technologies to a third party without Washington's advanced consent. One solution might be for South Korea to follow Kazakhstan's example and undertake plutonium reprocessing within the framework of an IAEA-supervised multinational nuclear fuel bank.

Kazakhstan and South Korea could also launch joint, or mutually reinforcing, initiatives to strengthen nuclear security, such as relaunching the summits or other high-level gatherings to focus on nuclear security challenges and solutions. The end of the nuclear security summits has removed a major driver of multinational cooperation against nuclear terrorism. The world still lacks binding global standards and accountability for nuclear security. Given the tensions among the great powers, Kazakhstan and South Korea could have a pivotal role in driving progress in this area. The two countries' growing nuclear energy use and export ambitions give them an enormous stake in the security and safety of international nuclear commerce, which would suffer from a major nuclear terrorist incident anywhere.

Similarly, Kazakhstan and South Korea could promote initiatives to enhance the security of nuclear facilities in wartime, a threat highlighted by the Russia-Ukraine war, during which major fighting has transpired near several operating nuclear power stations. Ukraine's reactors have been designed to avoid a Chernobyl-style accident and thwart insider sabotage or external terrorist assaults, but the possibility that they might come under regular attack from invading Russian forces was never considered. This situation has presented a recurring challenge to the IAEA.<sup>31)</sup> Both Kazakhstan and South Korea have successfully transitioned from recipient countries of nuclear nonproliferation assistance to net contributors to countering nuclear weapons proliferation and other nuclear threats. As their role in the world's nuclear energy markets continues to increase, so will their ability to influence global nuclear security.

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31) "Update 81– IAEA Director General Statement on Situation in Ukraine," International Atomic Energy Agency, June 12, 2022, <https://reliefweb.int/report/ukraine/update-81-iaea-director-general-statement-situation-ukraine-12-june-2022>.

The nuclear nonproliferation policies and achievements of Kazakhstan and South Korea naturally differ due to certain unique circumstances. Though formally allied to Russia through the Collective Security Treaty Organization, Kazakhstan's government under Presidents Nazarbayev and Tokayev have pursued a "multi-vector" foreign policy that strives to maintain good ties with the United States and other Western countries, as well as China. In contrast, South Korea is not only a formal ally of the United States, but it hosts tens of thousands of U.S. soldiers and depends on U.S. extended deterrence guarantees, whereby the United States pledges to employ all possible means, including nuclear weapons, to defend South Korea from external threats. Second, Kazakhstan's prioritizing the ending of nuclear weapons testing reflects the country's horrific experience as a Soviet nuclear weapons testbed. In his speech before the UN General Assembly this September, President Tokayev observed that, having "suffered terribly from past nuclear weapons testing, ... we understand very clearly the dangers of escalating tensions between nuclear powers. For this reason, nuclear disarmament has become a key part of Kazakh foreign policy and we will be continuously struggling for a world free of nuclear arsenals."<sup>32</sup>) In contrast, South Korea became a leader of the nuclear security summit process primarily due to some unique historical and personal circumstances at the time. Third, in recent years South Korean leaders have refocused their attention on keeping North Korea a non-nuclear weapons state, while Kazakhstan's leaders, not facing such an imminent and immense nuclear threat, have maintained a broader nuclear nonproliferation agenda.

Still, several common factors explain why Kazakhstan and South Korea have become prominent leaders of the nuclear nonproliferation order. First, both countries have extensive experience with the negative impact of nuclear weapons. The Kazakhstani people suffered from the Soviet Union's exploitation of Kazakhstan's territory to detonate hundreds of nuclear weapons tests, inflicting horrific human and environmental damage. South Koreans have had to live in a country surrounded by nuclear weapons possessor states and nuclear weapons aspirants. In particular, the northern neighbor has conducted half a dozen menacing nuclear tests. Strong leadership by Nazarbayev and several South Korean presidents helped channel this national experience into global nonproliferation leadership.

Second, Kazakhstan and South Korea have developed a major stake in the peaceful use of nuclear energy due to their expanding role in supporting civilian nuclear energy programs. Kazakhstan has become the world's largest producer and exporter of natural uranium, while South Korea's commercial nuclear power

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32) "Kazakhstan to continue struggling for nuclear-weapon-free world – President," Kazinform, September 21, 2022, [https://www.inform.kz/en/kazakhstan-to-continue-struggling-for-nuclear-weapon-free-world-president\\_a3981470](https://www.inform.kz/en/kazakhstan-to-continue-struggling-for-nuclear-weapon-free-world-president_a3981470).

industry has carved out a leading role in the global nuclear energy market. Both states strive to ensure that the world sees nuclear energy as a safe and secure source of low-carbon energy as well as reassure others that they are responsible suppliers of nuclear products and services.

Third, their nuclear nonproliferation and disarmament achievements have become prominent means of raising their international status and influence, allowing them to hit above their weight in this area despite their middle power rank, as well as benefit economically. Both countries have secured election as non-permanent members of the UN Security Council and additional leadership roles in other international institutions. Importantly, they have both avoided the economic sanctions and political isolation of Iran, North Korea, and other middle powers whose prosperity and prestige have suffered from their leaders' unreasonable nuclear ambitions. Experts from Kazakhstan and South Korea (and other countries) have noted the value of applying both countries' rich experiences in renouncing nuclear weapons options to Iran, North Korea, and other proliferation problem states.<sup>33)</sup>

Finally, the great powers have generally welcomed their contributions. None of the P5 want Kazakhstan or South Korea to have nuclear weapons, while many of them have welcomed Astana's and Seoul's help in addressing proliferation problems ranging from the nuclear programs of North Korea and Iran to the growing gap between these states that have nuclear weapons and the demands of other countries critical of their slow pace of disarmament. The United States has provided important nonproliferation assistance to both countries—though the support has differed in each case, highlighting the importance of Washington's maintaining a diverse portfolio of nonproliferation support programs that can be optimally deployed depending on the recipient's specific conditions. The P5 should continue to encourage these nonproliferation overachievers at a time when their contributions have become even more vital.

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33) Kim Bo-gyung, "Experts from Korea, Kazakhstan shed light on denuclearization," *The Korea Herald*, September 30, 2019, <http://www.koreaherald.com/view.php?ud=20190930000892>.

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